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On scientific approaches to the Arctic boundaries' delimitation*

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Abstract. The article deals with the boundary delimitation of the Arctic and the territories belonging to it. The authors identified political, economic, and other factors influencing the delimitation of the Arctic territories. The approaches of the subarctic countries Canada, the USA, Norway, and Denmark, to the problem of the borders of their Arctic territories are considered. The authors analyze Russian regulatory legal documents, expert assessments, the boundaries of the Arctic zone of the Russian Federation and determine their importance for the socio-economic development of the country. The authors draw attention to the need for Russia to protect its sovereignty in the Arctic.

Keywords: *the Arctic, Russia, the Arctic zone of the Russian Federation, the Arctic space.*

Introduction

The idea of the Arctic as a physical-geographical area, its size, and boundaries has been repeatedly clarified throughout almost the entire 20th century and remains the subject of various studies and discussions [1; 2; 3; 4; 5].

Initially, the term "Arctic" was used for a part of the territory, which includes only the deep-sea Arctic basin, the seas and the islands of the Arctic Ocean, bounded from the south by the isotherm of July 5°C. Some experts also referred the northern part of the tundra zone (Arctic tundra) and the Arctic deserts to the Arctic. In this case, the Arctic included not only islands with landscapes of Arctic deserts and Arctic tundra but also the periphery of continents with arcttundra landscapes. Later, the Arctic began to be understood as the space occupied by different circumpolar landscapes located north of the border of forests and therefore includes Arctic deserts and all varieties of tundra.

Exhaust grounds for defining the boundaries of the Arctic are several interrelated natural-geographical, socio-economic and political-legal criteria.

The Arctic as a mega-region

In territorial terms, the Arctic is confined to 8 member countries of the Arctic Council (USA, Canada, Norway, Sweden, Finland, Denmark, Iceland, Russia) and occupies 40.3 million square kil-

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ometers. In these countries, more than 530 million people live. Less than 5 million of them — near the Arctic ocean [3, Lukin Yu.F., pp. 77–78].

The Arctic deep-water basin in the central part of the ocean around the North Pole; 10 seas — Greenland, Norwegian, Barents, White, Kara, Laptev, East Siberian, Chukotskoye, Beaufort, Baffin, Fox Basin, numerous straits and bays of the Canadian Arctic Archipelago, and the northern Pacific and Atlantic Oceans. Arctic islands and archipelagos: Vaigach, Wrangel, Greenland, Dixon, Franz Josef Land, Canadian Arctic Archipelago, Queen Elizabeth, New Earth, Novosibirsk, Norden-skiöld, North Earth, Svalbard, etc. [2, Lukin Yu.F., p. 18].

The importance of the Arctic space does not decrease but increases, acquiring even mainly not economically pragmatic essence, but some completely different metaphysical and sacred value. The Arctic region is socially perceived as a reserve green space of the whole world. In the Arctic, people see a global reservoir of clean air, freshwater (it is a third of the world's freshwater reserves), and it is presented as the cleanest territory.

At the end of the twentieth century, the concept of “Arctic” expands, it is defined as “the northern polar region of the Earth, including the outskirts of Eurasia and North America, almost the entire Arctic Ocean with islands (except for the coastal islands of Norway), as well as the adjacent parts of the Atlantic and Pacific Oceans. The southern border of the Arctic coincides with the southern boundary of the tundra zone and its area is about 27 million km². Sometimes the Arctic is viewed as limited from the south by the Arctic Circle (66°33' N). In this case its area is 21 million km².” In this definition, the southern boundary of the Arctic is not clearly defined.

If the Arctic is limited from the south only by the conventional line of the Arctic Circle (66°33'44" northern latitude), then its area is 21 million km². If the southern border of the Arctic coincides with the southern boundary of the tundra zone, in this case, its area is about 27 million km², which is 3 times more than the area of Europe [2, Lukin Yu.F., pp. 42, 77, 78].

The Arctic countries, too, have no clear definition of the boundaries of the Arctic. Canada defines its Arctic area as a territory that includes the Yukon watershed, all lands north of 60° N and the coastal area of Hudson Bay and James Bay. The area of polar territories of Canada is 1,430 million km².

The current Arctic areas of the United States consists of the US territories north of the Arctic Circle and south of it, incl. the chain of the Aleutian Islands, territories north and west of the border formed by the rivers of Porcupine, Yukon, and Kuskokwim, as well as all adjacent seas, incl. the Beaufort Sea, the Bering Sea, and the Chukchi Sea. The polar area of the United States is 0,126 million km².

Norway does not define its Arctic territories in national regulations. But when the Arctic Environment Ministers signed on 13 June 1997 the Arctic Marine Oil and Gas Guidelines determined that for the purposes of the Guidelines, the Arctic territory of Norway are the areas of the Norwegian Sea north of 65° N. The area of the polar possessions of Norway is 0.746 million km².

Denmark has included Greenland and the Faroe Islands in its Arctic region. The extension of Danish sovereignty over Greenland was fixed by the decision of the Permanent Court of International Justice in 1933. The polar area of Denmark is 0.372 million km².

It should be noted that the uncertainty of the criteria of “Arctic” and its boundaries regularly arises both in the scientific environment and in public administration when it comes to the development of strategic solutions to the problems of the region.

In 1989, State Commission under the Council of Ministers of the USSR for Arctic Affairs fixed its concept as a “single physical-geographical region, which includes (within the polar zone and distribution of year isotherms of July +5°C) sea waters covered in summer with drifting ice, creating unfavorable conditions for navigation, and land areas where the continuous eternal permafrost there is an ice cover or a forested tundra”¹.

The main criteria for the allocation of the southern boundary of the Arctic were the Arctic Circle, the mid-year isotherm of July +10°C and permafrost zone. Since these criteria included variable characteristics and did not fully reflect the physical and structural properties of natural objects, these criteria were not widely applied to the identification of the territory of the Arctic.

However, the geographical boundaries of natural objects of the Arctic should have stable contact and barrier functions. The use of political, socio-economic and other subjective criteria for identifying the territory of the Arctic should also be excluded.

The Arctic is a natural economic system and a three-dimensional structure: geographical, economic and political and legal dimensions.

Geographic criteria

The question of defining the boundaries of the Arctic as a polar physical-geographical area remains debatable. The geographical boundaries of the Arctic (the idea of which was repeatedly changed during the 20th century) do not coincide with the administrative and territorial boundaries of the northern territories of the Arctic States. This circumstance creates difficulties in the Arctic identification of natural areas. Accordingly, when preparing strategic planning documents related primarily to the protection of the Arctic environment, this issue becomes relevant [6].

In strategic planning documents, the AZRF is positioned as part of the Arctic. In fact, the AZRF includes territories that extend beyond the natural zones of the Arctic. Land areas of the AZRF are located not only within the Arctic climatic zone, Arctic deserts and polar tundra, which traditionally belong to the Arctic but also within the territories with subarctic climate and landscapes of the northern taiga.

After the decision on the composition of the land territories of the AZRF, par. 2 of the Fundamentals of State Policy of the Russian Federation in the Arctic for the period up to 2020 and fur-

¹ The decision of the State Commission under the Council of Ministers of the USSR on Arctic Affairs of April 22, 1989 Archive of the Ministry of Economic Development of Russia.

ther perspective is a subject to clarification². In this paragraph, it is necessary to clarify that the AZRF is not only a part of the Arctic but also covers the Subarctic zone. The southern administrative-territorial boundary of the AZRF should be defined as the boundary of the historically formed Arctic natural and economic complex, combining sea and land species activities and management. Strategic planning documents should consider the presence of the Arctic and subarctic natural territories and comfort zones within the AZRF. The status of AZRF as a macro-region and the mechanism of coordination of activities (management) in this macro-region are also subject to clarification.

Within the AZRF, we can allocate zones, incl. coastal territory and coastal waters, with the normative legal establishment of the respective powers of the subjects of the Russian Federation in part strategic planning for the development of the coastal territory and coastal waters.

Political and socio-economic criteria

Political and economic criteria for establishing the boundaries of the Arctic are applied for management and definition of economic zones. Based on these criteria, the Arctic zone was determined.

The motivation for the allocation of the Arctic zone was the discovery in the north of the country, in the 1980s, of unique offshore oil and gas fields, the development of which required the creation of large mining centers with the developed infrastructure of transportation and processing of raw materials. The Arctic transport and logistics infrastructure should serve a factor for the economic development of coastal territories. The development of the Arctic transport system, primarily the Northern Sea Route, the creation of large territorial production complexes in the Arctic zone is focused on obtaining economic benefits and socio-economic challenges.

In the Fundamentals of State Policy of the Russian Federation in the Arctic, the Arctic zone of the Russian Federation (AZRF) refers to the part of the Arctic (northern area of the Earth, incl. the deep-sea Arctic basin, shallow coastal seas with islands and adjacent parts of the continental land of Europe, Asia and North America). Within the Arctic there are five Arctic States: Russia, Canada, the United States of America, Norway and Denmark, which have an exclusive economic zone and continental shelf in the Arctic Ocean. In Russia, it includes the territories (or their parts) of the Republic of Sakha (Yakutia), the Murmansk Oblast and the Arkhangelsk Oblast, the Krasnoyarsky Krai, Nenets, Yamal-Nenets and Chukotka autonomous districts, as well as the lands and islands specified in the Resolution of the Presidium of the Central Executive Committee of the USSR dated April 15, 1926 "On the declaration of the territory of the USSR of lands and islands located in the Arctic Ocean" and the surrounding territories, lands and islands in internal sea waters,

² Osnovy gosudarstvennoj politiki Rossijskoj Federacii v Arktike na period do 2020 goda i dal'nejshuyu perspektivu [Fundamentals of the state policy of the Russian Federation in the Arctic for the period up to 2020 and beyond]. Approved by the President of the Russian Federation on 18.09.2008 № Pr-1969. [In Russian]

territorial sea, the exclusive economic zone and the continental shelf of the Russian Federation within which Russia has sovereign rights and jurisdiction in accordance with international law³.

The northern boundary of the AZRF within the maritime spaces is determined by the outer limits of the continental shelf of the Russian Federation and the exclusive economic zone of the Russian Federation, and its southern border is located on the land territory and coincides with the administrative boundary of the respective autonomous districts and municipalities. Clarification and regulatory consolidation of the boundaries of the AZRF are necessary to protect the national interests of the Russian Federation in the Arctic, to implement strategic planning of the development of the Arctic territories, and also to solve current problems of social and economic development, incl. those related to the provision of life within the AZRF, considering the specifics of the region.

The AZRF is positioned in the Spatial Development Strategy of the Russian Federation until 2025, February 13, 2019, not as an economic macro-region, but as a geostrategic territory of nine constituent entities of the Russian Federation [3, pp. 28–29]. This document identifies 12 macro-regions of Russia: Centralnyj, Centralno-Chernozemnyj, Severo-Zapadnyj, Severnyj, YUzhnyj, Severo-Kavkazskij, Volgo-Kamskij, Volgo-Uralskij, Uralsko-Sibirskij, Yuzhno-Sibirskij, Angaro-Enisejskij, Dalnevostochnyj. They include territories of several Arctic regions of the Russian Federation. Their socio-economic conditions require identifying areas, priorities, goals, and objectives of socio-economic development in working out the strategic planning documents [3; 8; 9; 10; 11; 12; 13].

In 2014, the composition of administrative-territorial formations on the land territory of the AZRF was specified⁴. The land territories of the AZRF include the territories of the Murmansk Oblast, the Nenets Autonomous Okrug, the Chukotka Autonomous Okrug, the Yamal-Nenets Autonomous Okrug, Municipalities of Vorkuta (the Komi Republic), “Town of Arkhangelsk”, “Mezensky municipal district”, “Novaya Zemlya”, “Town of Novodvinsk”, “Onega municipal district”, “Primorsky municipal district”, “Severodvinsk” (the Arkhangelsk Oblast), Allaikhovskiy ulus (district), Anabar national (Dolgan-Evenkiy) ulus (district), Bulunskiy ulus (district), Nizhnekolymskiy district, Ust-Yanskiy ulus (district) (the Republic of Sakha (Yakutia), urban district of Norilsk, Taimyr Dolgan-Nenets municipal district, Turukhanskij district (the Krasnoyarsk Krai), as well as lands and islands located in the Arctic Ocean, specified in the Resolution of the Presidium of the Central Executive Committee of the USSR dated April 15, 1926. “On declaring the territory of the USSR of lands and islands located in the Arctic Ocean” and other acts of the USSR⁵.

³ Osnovy gosudarstvennoj politiki Rossijskoj Federacii v Arktike na period do 2020 goda i dal'nejshuyu perspektivu [Fundamentals of the state policy of the Russian Federation in the Arctic for the period up to 2020 and beyond]. Approved by the President of the Russian Federation on 18.09.2008 № Pr-1969. [In Russian]

⁴ «O suhoputnyh territoriyah Arkticheskoj Zony Rossijskoj Federacii» [“On land territories of the Arctic Zone of the Russian Federation”] Decree of the President of the Russian Federation of May 2, 2014, № 296. [In Russian]

⁵ Nacionalnyj atlas Arktiki/ Federal service of state registration, cadastre, and cartography. M.: Roscartographiya, 2017. 495 p. Bibliogr.: pp. 492-495. [In Russian]

The composition of land territories of the AZRF was determined considering the following criteria: integrity of natural, economic and management systems, as well as ethno-economic areas of the small indigenous peoples of the North; infrastructure development of coastal territories and facilities for the benefit of marine potential and socio-economic development of administrative entities bordering the sea coast; transport attraction to the Northern sea route [14; 15].

The composition and boundaries of administrative-territorial formations on land territory in certain periods of socio-economic development undergo partial change. In 2017, three municipal districts of the Republic of Karelia — Belomorsky, Lowhsky, and Kemsky were included in the AZRF [16].

In accordance with the decisions of the State Commission for the Development of the Arctic, a federal law “On the development of the Arctic zone of the Russian Federation” is being developed and caused the creation of the ASRF as a part of the Arctic within which the Russian Federation has sovereignty, sovereign rights, and jurisdiction, and includes:

- a) the territories (parts of the territory) of the subjects of the Russian Federation, as defined by the Decree of the President of the Russian Federation of May 2, 2014, № 296;
- b) all open and able to be opened lands and islands located in the Arctic Ocean north of the coast of the Russian Federation to the North Pole and located in the limits of spaces delineated by lines secured by international treaties of the Russian Federation and the legislation of the Russian Federation;
- c) internal waters and territorial sea of the Russian Federation adjacent to the territories specified in sub-paragraphs “a” and “b”;
- d) the exclusive economic zone and continental shelf of the Russian Federation within the limits of sovereign rights and jurisdiction of the Russian Federation;
- e) airspace over the territories and waters listed in sub-paragraphs “a — d”.

I would like to note that now there is an incomplete process of delimitation of marine spaces of the Arctic Ocean. It is particularly true for the continental shelf, where significant potential hydrocarbon reserves are concentrated.

In accordance with the current legal acts, sea and land boundaries of the AZRF may be specified depending on the status of the territory, legal regime, socio-economic feasibility and the powers of different levels of government.

According to the authors, political and economic purposes of the development of the Russian Federation require that the main criterion of assigning the territory to the AZRF should be if the subject of the Russian Federation or its separate municipal districts are linked to the seas of the Arctic Ocean.

Concentrated and balanced development of the Northern Sea Route, the coastal marine spaces of the Arctic Ocean and the AZRF could give additional economic impetus to the development of the North of our country.

Legal criteria

There is no single international treaty defining the legal status of the Arctic. Regulation is carried out by international law, national legislation of the Arctic States and bilateral agreements.

The following territories are distinguished by the types of the legal regime in the Arctic: state territory; territory with the international regime; territory with the mixed regime.

State territory is the territory that is under the sovereignty of a particular state, i.e., belongs to a specific country, carrying out its territorial supremacy within its limits.

The territory under the international regime includes terrestrial areas outside the state territory which do not belong to anyone separately but are shared by all states in accordance with international law (the high seas, the airspace above it and the deep seabed beyond the continental shelf). The international legal regime of the high seas is governed by international treaties and international legal customs that regulate the relations of states with respect to the high seas and establish rules for its use for navigation, fishing, etc.

The territories with a mixed regime include the continental shelf and the economic zone. These areas are not under the sovereignty of states and are not part of State territories, but each coastal State has sovereign rights to explore and exploit natural resources the adjacent continental shelf and the maritime economic zone, as well as the protection of the natural environment of those areas. The scope of these rights is determined by international law, in particular, the Convention on the Continental Shelf (1958) and the UN Convention on the Law of the Sea (1982). Within the limits of these rights, each state shall issue its own laws and regulations governing these activities. Otherwise, the principles and rules of international law of the sea apply to the continental shelf and in the economic zone.

It should be noted that some Arctic countries, like the United States, have not ratified the UN Convention on the Law of the Sea and it creates practical difficulties in the implementation of these principles.

The definition of the Arctic border largely depends on scientific specialization and political conjuncture. Often confusion arises because of the unclear use of concepts "Arctic", "Arctic region", "Far North", etc. Professor of Social Anthropology Mark Nuttall (University of Alberta, Canada), who completed anthropological research and fieldwork in Greenland, Canada, Finland, Alaska, correctly and accurately noticed: "No way to define the Arctic is satisfactory for all purposes, and most often practical definition becomes necessary for research projects, reports, assessments, scientific monographs, university, and college courses to determine and distinguish between the physical, environmental, political, social and cultural processes to be covered."⁶

Russia submitted applications for the expansion of its Arctic shelf in 2001 and 2015 to the UN Commission after a special scientific research. The study of the application began in August 2016, and the decision is expected to be taken within 2-4 years. In addition to Russia, in 2013, the application for the expansion of the continental shelf in the Arctic Ocean was filed by Canada. At the same time, Canadian representatives reported about the plans to claim a part of the seabed

⁶ Encyclopedia of the Arctic. Volume 1 A—F. Mark Nuttall, Editor. Routledge New York and London, 2005.

beyond 200 miles exclusive economic zone. Denmark filed several applications, the last one in 2014.

In our view, in the face of the sharp deterioration of the current international situation, a favorable decision on this issue is unlikely possible. And if it does, it will significantly reduce our intentions in the expansion of the Arctic shelf. It is also necessary to prepare for such a situation.

In these circumstances, the primary task for Russia is to prevent conflicts in the region. It is important to do for preservation and expansion of Russia's sovereignty in the Arctic, for further study, exploration, extraction, and use of the riches of the northern territories our country. To protect its national interests, Russia should make every effort to develop the Arctic infrastructure to expand its influence in the Arctic. It will strengthen the position of the Russian Federation and contain the "struggle for the Arctic" in the framework of diplomatic cooperation within the UN and various forums, and it is in the interests of all humanity.

The current need, according to Doctor of Economics, Professor N.D. Yeletsy, is to overcome the negative attitudes that have emerged in recent decades to refuse to protect the Russian Federation sovereignty over significant waters of the northern seas — installations inevitably associated with the attendant weakening of geopolitical positions, international authority, as well as tangible economic losses [17].

Russia's recognition of the fundamental provisions of the UN Convention on the Law of the Sea means a radical change in the legal status of territories previously defined as "polar possession", and ratification of this convention in 1997 led to the official loss of sovereignty over 1.7 million km² of previously Russian Arctic waters. It is significant that the US has not signed this Convention.

Today speaking about Russia's ratification of the UN Convention on the Law of the Sea, we see that, based on this Convention, many states, and primarily the US, want to "internationalize" the Arctic region and it is not in the interests of Russia. And therefore, the statement of Arthur Chilingarov, the special representative of the President of the Russian Federation for international cooperation in the Arctic and Antarctica, is understandable: "I would like to say that there are different views on the convention (the UN Convention on the Law of the Sea, 1982), but the common view is that we may have rushed to ratify it⁷." As it was rightly noted by the senior researcher of IMEMO RAS E. Labetskaya: "Russia's ratification of the Convention in 1997 and its official submission of the application in 2001 to the relevant UN Commission to determine the outer limits of its continental shelf de-facto undermined the "sectoral regime"[18].

In these circumstances, it is necessary, in our view, to recognize the mistakes that have been made. The legislative and executive authorities begin to correct them and minimize their negative consequences. According to the member of the Federation Council, Chairman of the Arc-

⁷ Chilingarov A.N. Problemy i perspektivy effektivnogo osvoeniya i razvitiya Arkticheskoy zony i prilegayushchih regionov Rossii [Problems and prospects of effective development and development of the Arctic zone and adjacent regions of Russia]: Proceedings of the meeting of the "Mercury Club" October 8, 2014 [In Russian]

tic and Antarctic Council of the Federation V.A. Shtyrov: “the best option for Russia would be an agreement on the return to the sectoral division of the Arctic and the securing the status of historical waters over the seas: Laptev, Kara, East Siberian and a part of Chukotka (from the island of Wrangel to the Bering Strait)” [19].

Conclusion

The definition of the AZRF boundaries was an objective necessity and required considerable long-term work of the state authorities of Russia, as well as representatives of science. It is important for defining and clarifying the policy of the state in the Arctic territories. The Russian approach to defining borders is, in the opinion of the authors, the most acceptable, corresponding to the current stage of development of the Arctic region. In the future, depending on climatic and other conditions, incl. the identification of areas of development support zones, they may be modified in order to address economic, social and environmental problems of the ASRF and the implementation of a more effective state regional policy. Structuring these boundaries will require the use of modern techniques, incl. modeling, synthesis of knowledge and modern practices, considering national interests and values in domestic and foreign policy, tasks of ensuring the security of Russia in the Arctic.

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